

College Students' Awareness and Perceptions of Dissolvable Tobacco Products

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- **Background: Parent Study**
 - **Analyses to Date on Dissolvables**
 - **Awareness**
 - **Appeal**
 - **Likelihood to Try Free Sample**
 - **Risk Perception**
 - **Next Steps**
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Parent Study: Background

- Young adults age 18-25 have the highest prevalence of smokeless tobacco (SLT) use of any adult age group¹
- SLT products are marketed to college students²
- New products, such as *snus* and *dissolvables*, are being marketed as ways for smokers to get nicotine in places where smoking is not permitted—a condition that is increasingly the norm on college campuses

¹Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (October 15, 2009). *The NSDUH Report: Trends in Tobacco Use among Adolescents: 2002 to 2008*. Rockville, MD.

²Campaign for Tobacco Free Kids (2008). United States Smokeless Tobacco Company: A Real Public Health "Bandit". Retrieved on 1-22-2010 from <http://www.tobaccofreekids.org/research/factsheets/pdf/0284.pdf>.

- To measure *trajectories of SLT use* among undergraduate college students over the course of their college careers
 - Initiation, Progression, Cessation, Substitution
 - To identify *environmental- and individual-level correlates* of trajectories of SLT use
 - To examine *patterns of use* of SLT products
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- **Observational cohort study**
 - **11 colleges and universities**
 - 7 North Carolina, 4 Virginia
 - 10 public, 1 private
 - 5 rural, 4 suburban, 2 urban
 - Range of Undergraduate Enrollment: 4,024 – 23,730
 - Density of tobacco retail outlets within 2-mile radius:
0.47 – 5.99 outlets per 1,000 students
 - **Screening Web-survey of Freshmen (Fall 2010)**
 - **Cohort Web-survey - 7 semesters from freshman through senior year (Fall 2010-Fall 2013)**
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Behaviors and Constructs Measured in the Cohort Survey

- **SLT Use, Awareness, and Risk Perceptions**
 - **Exposure to SLT Marketing**
 - **Nicotine Dependence and Quit Behavior**
 - **Use of Other Tobacco Products**
 - **Family & Peer SLT and Cigarette Use**
 - **Binge Drinking and Illicit Drug Use**
 - **Demographic/Personal Characteristics**
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■ **Screeners Survey**

- **Incentive: 10 students/school won \$100 debit card**
- **10,528 students completed (36% response rate)**

■ **Cohort Survey**

- **Incentives: baseline \$15, increases by \$5 each semester**
 - **Oversampling**
 - **SLT Users**
 - **Cigarette Smokers**
 - **Males**
 - **3,151 students joined cohort and completed baseline survey (Fall 2010) (64.2% of those invited)**
 - **Retention rate: 80.1% (Spring 2011), 78.2% (Fall 2011)**
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Cohort Characteristics

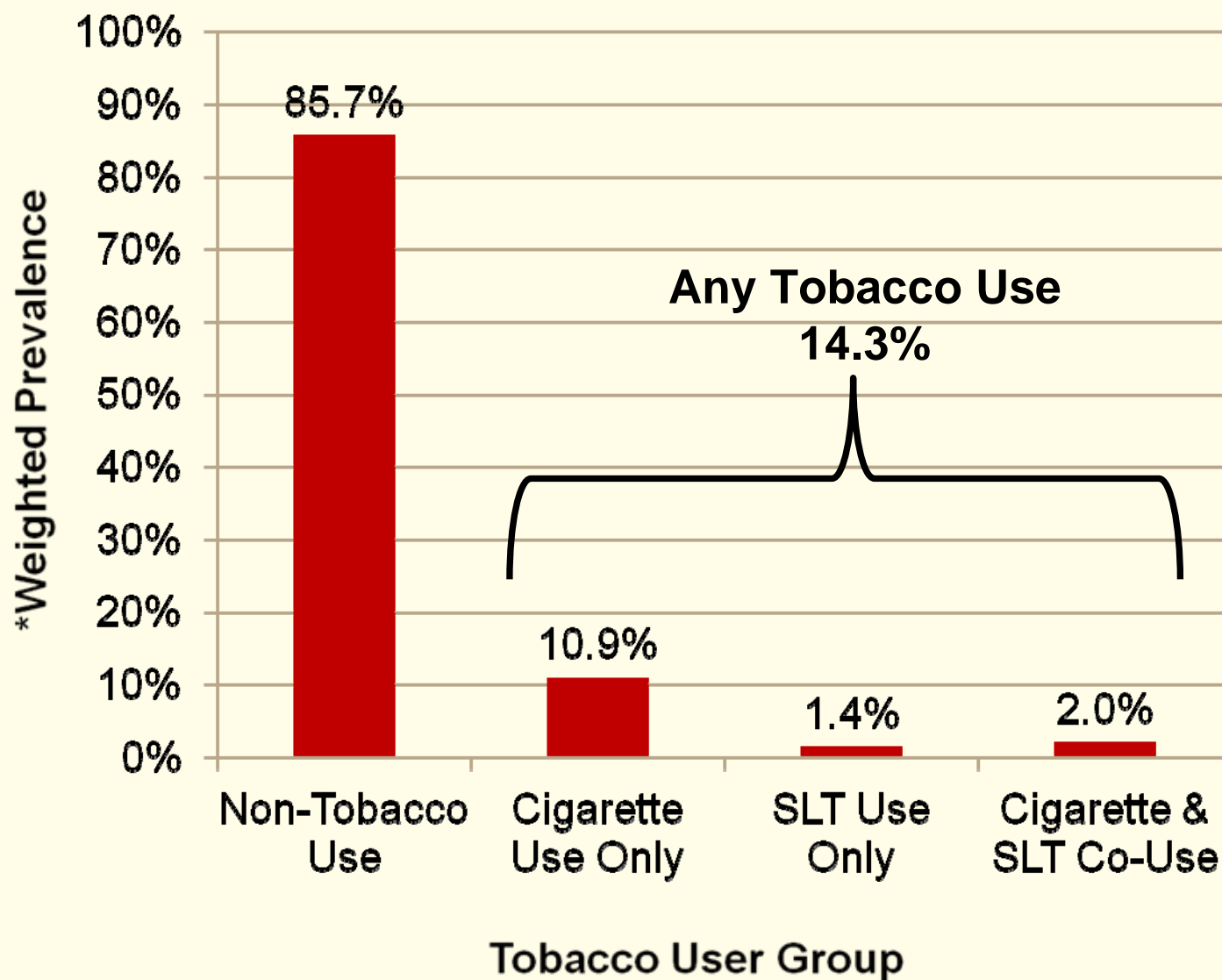
(N = 3,151)

Characteristics	%
Male	50
Age 18	85
White	84
Hispanic	7
Spending Money < \$100 per Month	43
Mother College Degree	62
Father College Degree	65

- **Student weights were calculated independently for each school to reflect the inverse probability of selection from the screener survey**
- **A student-level non-response adjustment was applied to the student weight**
- **Student weights were then scaled using the approach of Pfefferman et al. (1998) to account for the complex survey design (students sampled within schools)¹**

¹Pfefferman D, Skinner CJ, Holmes DJ, Goldstein H, Rasbash J (1998). Weighting for unequal selection probabilities in multilevel models. *Journal of the Royal Statistical Society Series B*, 60, 23-40.

Weighted Prevalence of Past 30-Day Tobacco Product Use



Awareness, Appeal, Likelihood to Try Free Sample: Chew

One type of smokeless tobacco product which is not burned or smoked is **chewing tobacco**. Several examples are shown here:



Are you aware of this type of smokeless tobacco: chewing tobacco?

- ☐ Yes
☐ No

How **appealing** is chewing tobacco to you?

- ☐ Very appealing
☐ Somewhat appealing
☐ Somewhat unappealing
☐ Very unappealing

How likely would you be to try chewing tobacco if you were offered a free sample?

- ☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

Awareness, Appeal, Likelihood to Try Free Sample: Moist Snuff

Another type of smokeless tobacco product which is not burned or smoked is **snuff** (frequently referred to as "**dip**"). Several examples are shown here:



Are you aware of this type of
smokeless tobacco: snuff, or dip?

- ☐ Yes
☐ No

How **appealing** is snuff/dip to you?

- ☐ Very appealing
☐ Somewhat appealing
☐ Somewhat unappealing
☐ Very unappealing

How likely would you be to try
snuff/dip if you were offered a free
sample?

- ☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

Another type of smokeless tobacco product which is not burned or smoked is snus. Several examples are shown here:



Are you aware of this type of
smokeless tobacco: snus?

- ☐ Yes
☐ No

How appealing is snus to you?

- ☐ Very appealing
☐ Somewhat appealing
☐ Somewhat unappealing
☐ Very unappealing

How likely would you be to try snus if
you were offered a free sample?

- ☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

Another type of smokeless tobacco product which is not burned or smoked is called **dissolvables**. Several examples are shown here:



Are you aware of this type of
smokeless tobacco: dissolvables?

- ☐ Yes
☐ No

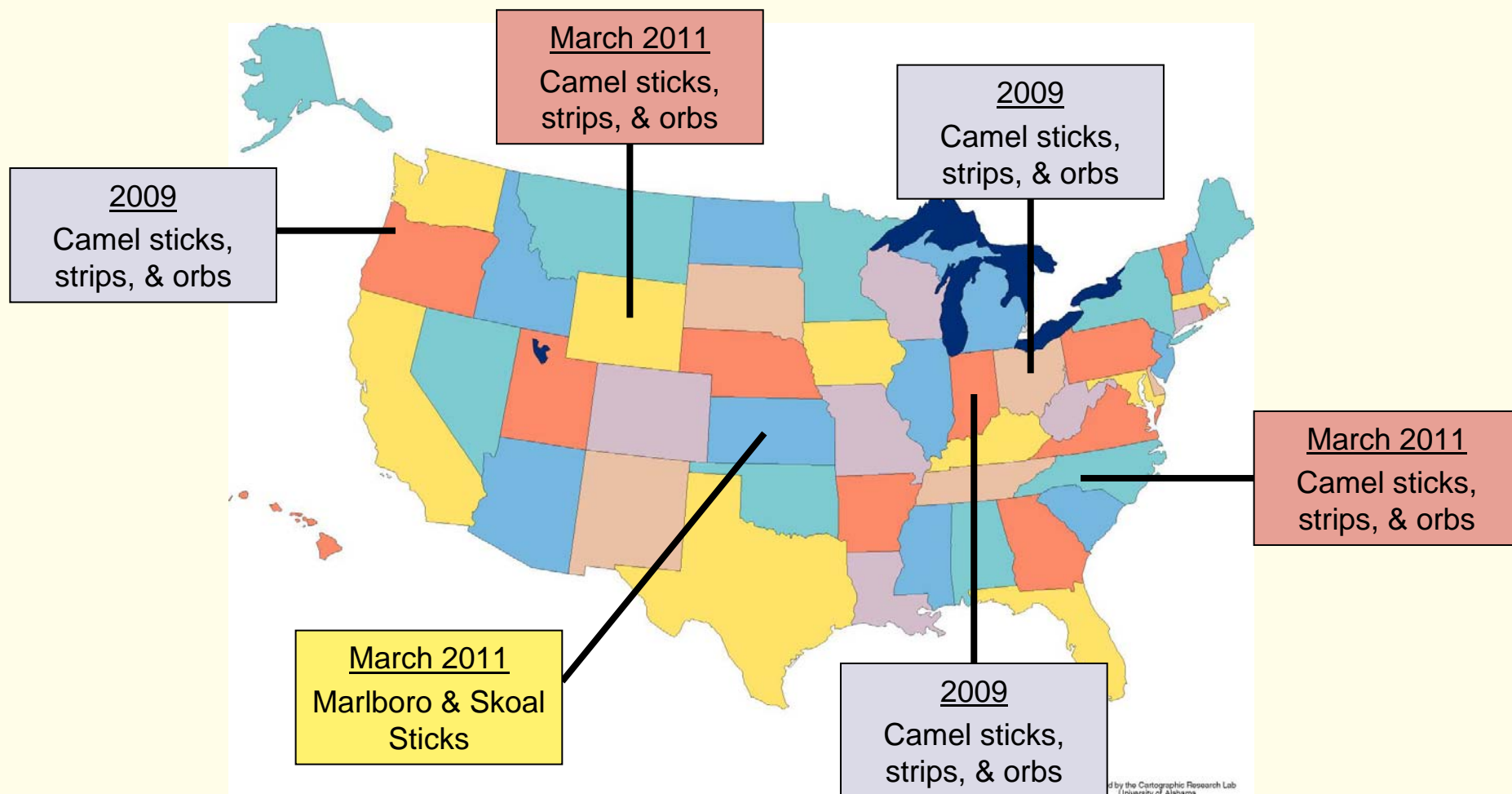
How **appealing** are dissolvables to
you?

- ☐ Very appealing
☐ Somewhat appealing
☐ Somewhat unappealing
☐ Very unappealing

How likely would you be to try
dissolvables if you were offered a free
sample?

- ☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

Dissolvables Test Markets



Another type of smokeless tobacco product which is not burned or smoked is called **dissolvables**. Several examples are shown here:



Are you aware of this type of smokeless tobacco: dissolvables?

- ☐ Yes
- ☐ No

How **appealing** are dissolvables to you?

- ☐ Very appealing
- ☐ Somewhat appealing
- ☐ Somewhat unappealing
- ☐ Very unappealing

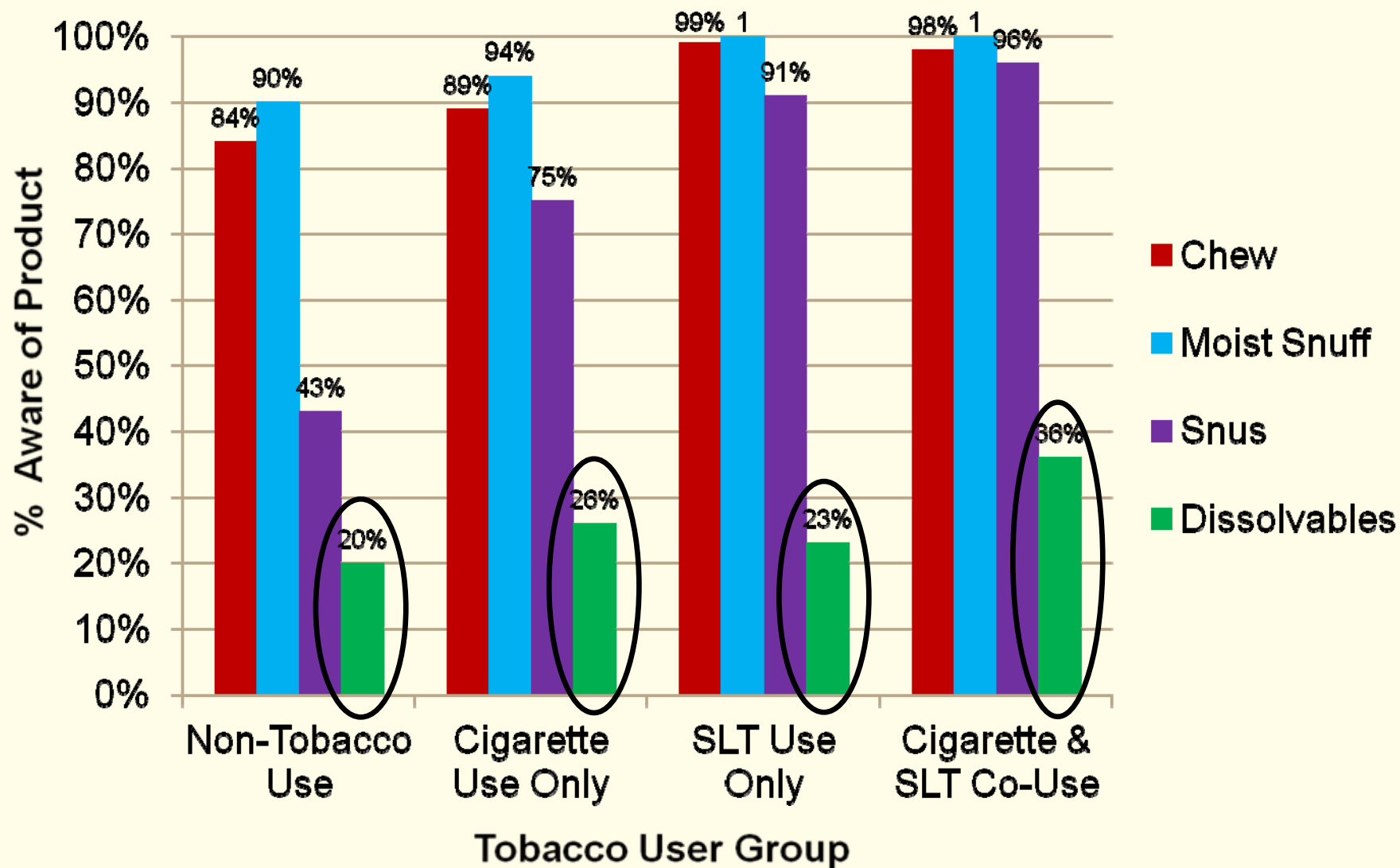
How likely would you be to try dissolvables if you were offered a free sample?

- ☐ Definitely yes
- ☐ Probably yes
- ☐ Probably no
- ☐ Definitely no

Awareness of SLT Products



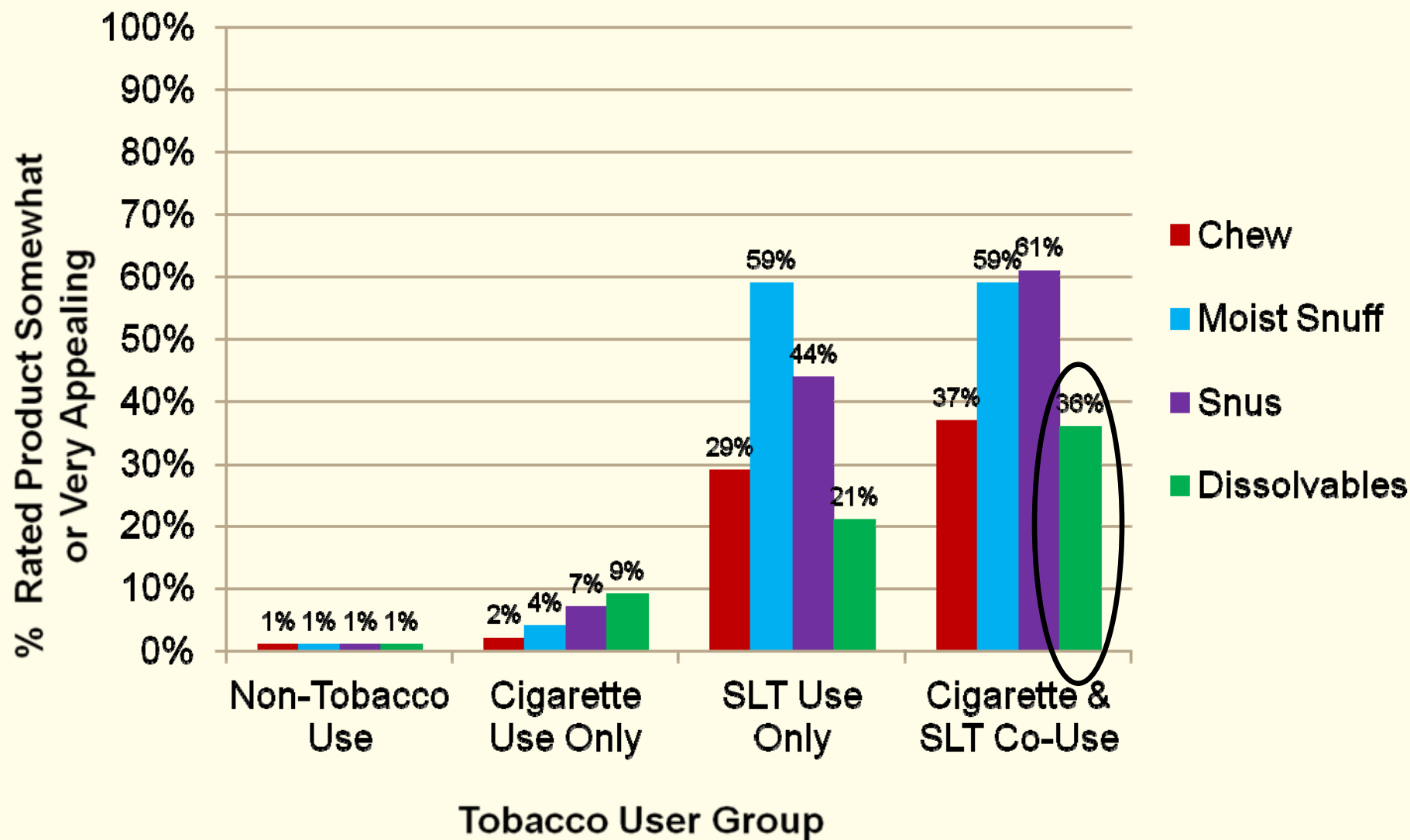
Awareness of SLT Products



Appeal of SLT Products



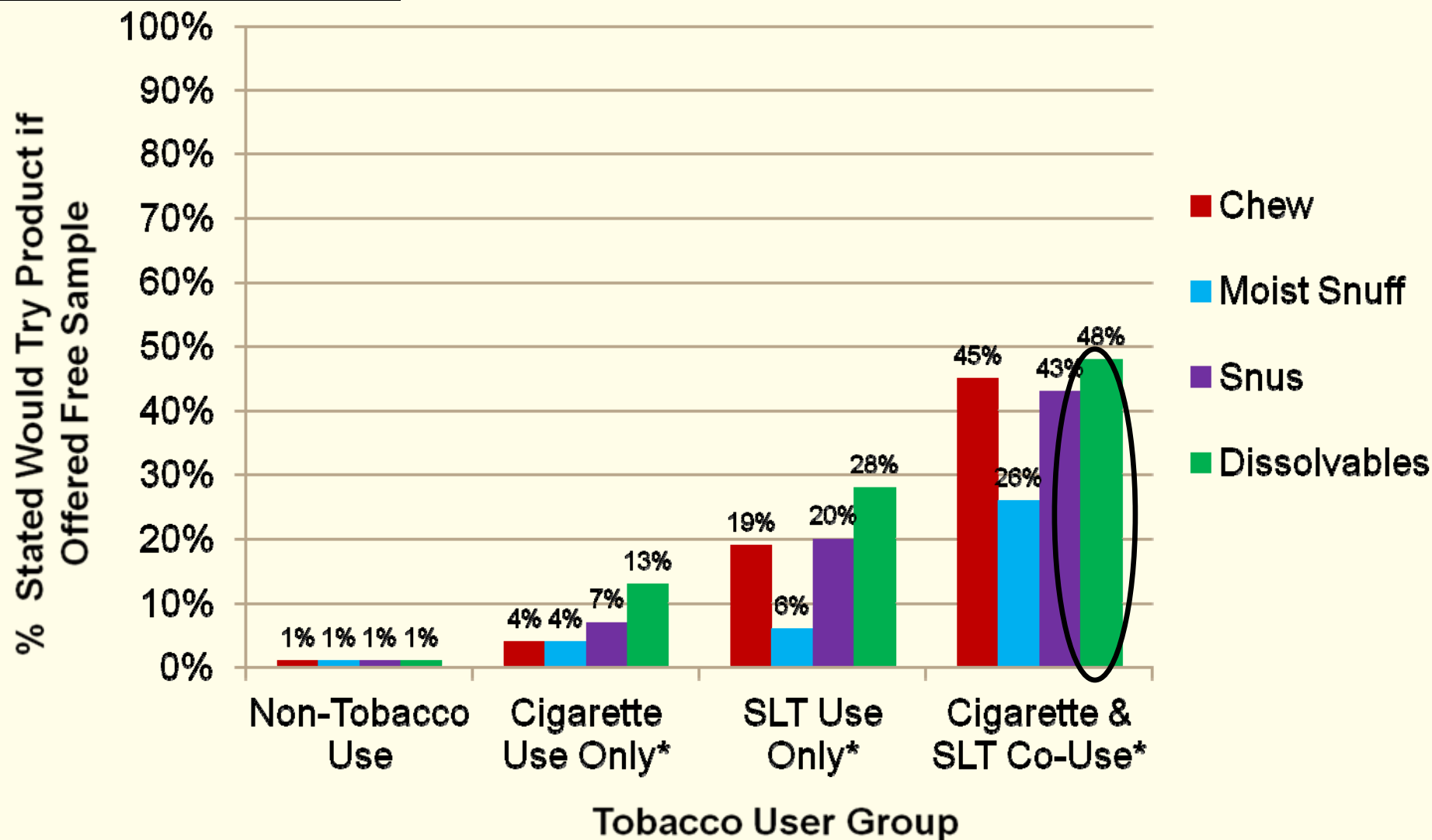
Appeal of SLT Products



Likelihood To Try Free Sample of SLT Products

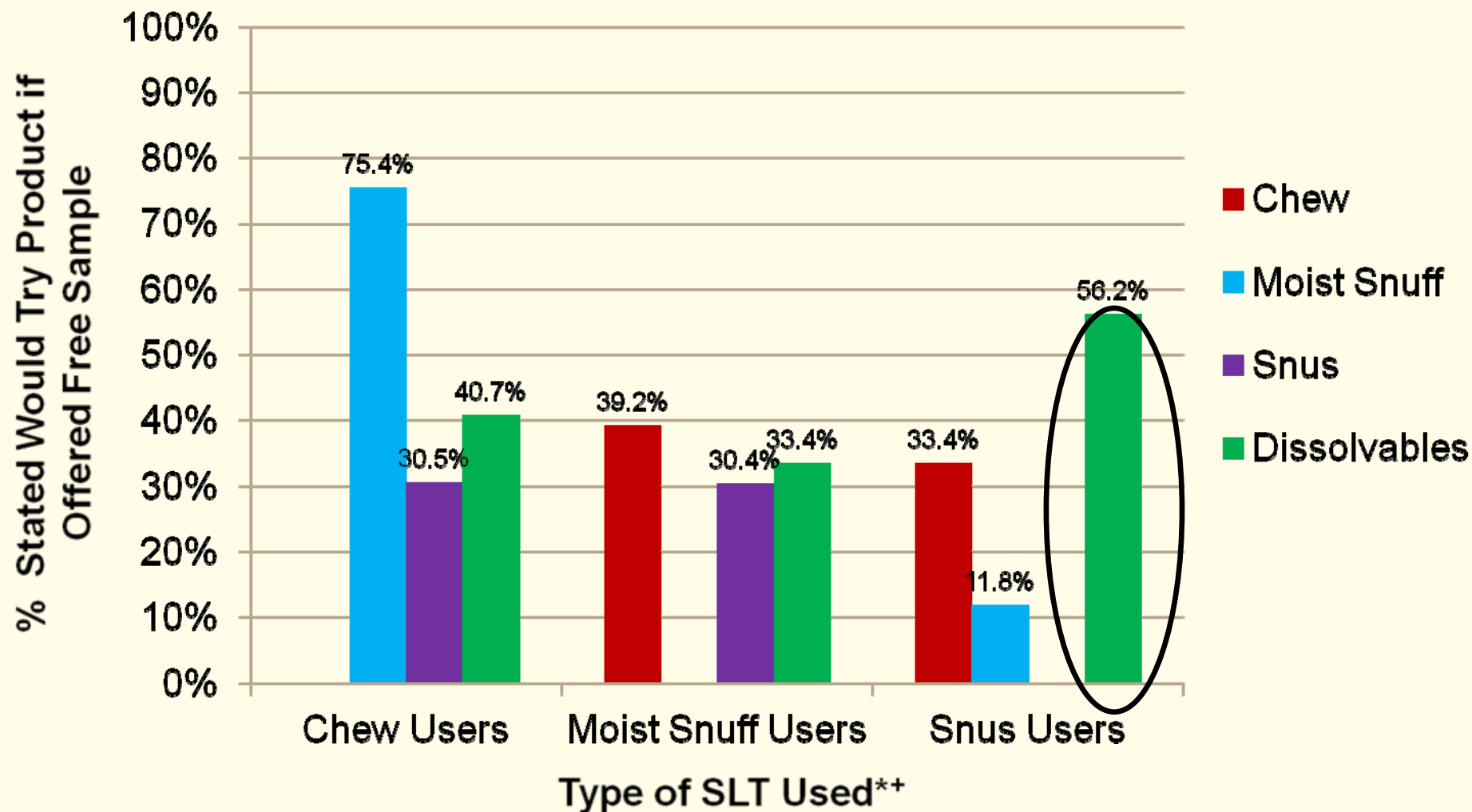


Students Reporting They Would Try Product if Offered Free Sample



*Excludes those who have ever used product in question

Students Reporting They Would Try Product if Offered Free Sample



*Excludes those who have ever used product in question, +Dissolvable users not included due to low prevalence

Predictors of Response to Question on Likelihood of trying a Free Sample of Dissolvables (“Definitely Yes, Probably Yes”)

	OR (95% CI)	p-value
Current Cigarette User	6.3 (3.8, 10.5)	p < 0.001
Current Chew User	1.6 (0.7, 3.7)	P =0.291
Current Dip User	2.6 (1.1, 5.7)	P=0.022
Current Snus Users	6.5 (3.0, 14.3)	P<0.001
Dissolvable Aware (Yes vs. No)	0.8 (.4, 1.4)	P=0.406
Male vs. Female	2.5 (1.6, 3.8)	p<0.001
Age 18 vs. 18+	0.6 (.3, .98)	p=0.043
White vs. Non-White	0.7 (0.4, 1.5)	P=0.360
Hispanic vs. Non-Hispanic	1.4 (0.7, 2.7)	P=0.282
Mom College Degree	1.01 (0.5, 2.1)	P=0.966
Dad College Degree	0.9 (0.5, 1.4)	P=0.512
Sensation Seeking	1.5 (1.1, 2.1)	P=0.012
<\$100 Spending Money	0.8 (0.6, 1.2)	P=0.338
Binge Past 30 Days	1.1 (0.7, 1.7)	P=0.663
Marijuana Past 30 Days	1.1 (0.7, 1.6)	P=0.696
Lifetime Illicit Drug Use	2.1 (1.4, 3.0)	P<0.001

Perception of Risk of SLT and Cigarette Use





Thinking about each of the smokeless tobacco product types, using the risk ladder below, please indicate what you believe the risk is for people who use each smokeless tobacco product for developing the following health problems:

RISK LADDER									
Very low risk of disease								Very high risk of disease	
1	2	3	4	5	6	7	8	9	10

Please enter a number from 1 to 10 in each space.

	Chewing Tobacco	Moist or dry snuff (AKA "Dip")	Snus	Dissolvables
Oral cancers or dental problems	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other cancers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Heart disease or stroke	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Risk of addiction	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Perception of Risk of SLT and Cigarette Use

Very low risk
of disease

1

2

3

4

5

6

7

8

9

10

Very high risk
of disease

		Mean (SE) perception of risk				
	Tobacco User Group	Cigarettes	Chew	Moist Snuff	Snus	Dissolvables
Oral Cancers or Dental Problems	Both	6.8 (.22)	8.1 (.11)	8.1 (.08)	6.3 (.24)	5.6 (.29)
	Cig only	7.9 (.08)	8.7 (.10)	8.7 (.11)	7.9 (.10)	7.2 (.09)
	SLT only	7.3 (.35)	7.7 (.26)	7.7 (.24)	6.1 (.27)	5.6 (.40)
	None	8.5 (.06)	8.9 (.04)	8.6 (.05)	7.9 (.06)	7.4 (.08)
Other Cancers	Both	8.1 (.13)	6.1 (.15)	6.1 (.21)	5.1 (.17)	5.2 (.23)
	Cig only	8.5 (.06)	7.0 (.12)	7.0 (.12)	6.7 (.10)	6.5 (.10)
	SLT only	8.1 (.25)	5.9 (.38)	6.0 (.37)	5.1 (.41)	5.3 (.41)
	None	8.7 (.06)	7.5 (.10)	7.4 (.09)	7.2 (.09)	7.1 (.10)
Heart Disease or Stroke	Both	7.1 (.13)	4.7 (.20)	4.5 (.19)	4.0 (.25)	4.3 (.24)
	Cig only	7.8 (.09)	6.3 (.09)	6.2 (.08)	6.1 (.07)	6.0 (.05)
	SLT only	7.5 (.22)	5.0 (.42)	4.9 (.43)	4.3 (.36)	4.4 (.41)
	None	8.1 (.07)	6.8 (.09)	6.8 (.08)	6.7 (.07)	6.7 (.08)
Risk of Addiction	Both	8.6 (.09)	7.4 (.17)	7.7 (.18)	6.3 (.17)	6.6 (.25)
	Cig only	8.8 (.08)	8.6 (.06)	8.6 (.07)	8.4 (.07)	8.2 (.06)
	SLT only	8.9 (.18)	7.6 (.21)	7.8 (.22)	6.2 (.28)	6.4 (.32)
	None	9.3 (.04)	8.8 (.07)	8.8 (.07)	8.6 (.08)	8.5 (.07)

Perception of Risk of SLT and Cigarette Use

Very low risk
of disease

1

2

3

4

5

6

7

8

9

10

Very high risk
of disease

		Mean (SE) perception of risk				
	Tobacco User Group	Cigarettes	Chew	Moist Snuff	Snus	Dissolvables
Oral Cancers or Dental Problems	Both	6.8 (.22)	8.1 (.11)	8.1 (.08)	6.3 (.24)	5.6 (.29)
	Cig only	7.9 (.08)	8.7 (.10)	8.7 (.11)	7.9 (.10)	7.2 (.09)
	SLT only	7.3 (.35)	7.7 (.26)	7.7 (.24)	6.1 (.27)	5.6 (.40)
	None	8.5 (.06)	8.9 (.04)	8.6 (.05)	7.9 (.06)	7.4 (.08)
Other Cancers	Both	8.1 (.13)	6.1 (.15)	6.1 (.21)	5.1 (.17)	5.2 (.23)
	Cig only	8.5 (.06)	7.0 (.12)	7.0 (.12)	6.7 (.10)	6.5 (.10)
	SLT only	8.1 (.25)	5.9 (.38)	6.0 (.37)	5.1 (.41)	5.3 (.41)
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Heart Disease or Stroke	Both	7.1 (.13)	4.7 (.20)	4.5 (.19)	4.0 (.25)	4.3 (.24)
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Risk of Addiction	Both	8.6 (.09)	7.4 (.17)	7.7 (.18)	6.3 (.17)	6.6 (.25)
	Cig only	8.8 (.08)	8.6 (.06)	8.6 (.07)	8.4 (.07)	8.2 (.06)
	SLT only	8.9 (.18)	7.6 (.21)	7.8 (.22)	6.2 (.28)	6.4 (.32)
	None	9.3 (.04)	8.8 (.07)	8.8 (.07)	8.6 (.08)	8.5 (.07)

- **Awareness of dissolvables is higher than might be expected (given limited test marketing at time of survey)**
 - **Dissolvables are most appealing to co-users of other SLT products & cigarettes**
 - **Free Sampling**
 - **Almost ½ of co-users of cigarettes and SLT would try a free sample of dissolvable product**
 - **Over ½ of snus users would try a free sample of dissolvable product**
 - **Dissolvables are viewed as the least risky category of tobacco product—especially with respect to oral cancers/dental problems**
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Next Steps

- **Finalize analyses of Fall 2010 data**
 - **Examine dissolvable use & perceptions in Fall 2011 & Spring 2012 Data**
 - **All students**
 - **Students from Charlotte area**
 - **Revise Fall 2012 survey to disentangle responses regarding lozenges versus sticks, strips, & orbs**
 - **Examine shifts in perceptions & behaviors within individuals over time**
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Questions?
